Rancang Bangun Alat Penyortir Otomatis Ikan Lele Siap Panen Berdasarkan Berat dan Panjang Berbasis Arduino

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ABSTRACT

Indonesia is a country with abundant natural resources. One of them as a support for the economy in Indonesia is in fisheries, namely freshwater fishery commodities. One of the freshwater fish that is in great demand by the community is catfish. The Ministry of Marine Affairs and Fisheries (KKP) also targeted catfish production to reach 1,494,691 tons (31.9%) of the total 4,685,446 tons of freshwater fishery production in 2020. Catfish that are ready to be harvested must meet specific criteria. So far, catfish farmers sort catfish ready for harvest using conventional methods, namely by using human labour. The method has a weakness, namely human judgments that are still subjective and inconsistent with an object, and work that is done repeatedly can cause saturation. Therefore, we need a tool that can sort catfish that have met the criteria for harvest, thereby improving the harvested catfish' quality and making it easier and faster for farmers to sort catfish. In this study, an Arduino-based sorting tool will be made to select catfish that are ready to be harvested automatically based on the weight and length of the catfish. The weight of catfish is obtained from load cell sensor readings, and the length of catfish is obtained from ultrasonic sensor readings combined with the obstacle sensor. Based on the tests that have been done, the accuracy and precision values of catfish weight readings are 77.63% and 71.39%, and the accuracy and precision values of catfish length readings are 70.16% and 82.63%. The reliability of the sensors' readings on this sorter is still considered low and needs to be re-developed.

Keywords: Catfish, Weight, Length, Sorter, Arduino